

**REMARKS**

Claims 1 and 4-11 are all the claims pending in the application. Claims 1, 6, and 9 are independent claims.

**Objections**

The Examiner has objected to the title of the invention as being non-descriptive. In response, Applicant has amended the title in a manner similar to that proposed by the Examiner.

The Examiner has also objected to the abstract of the disclosure. In response, Applicant has amended the Abstract in a manner similar to that proposed by the Examiner.

In view of these Amendments, Applicant respectfully requests that the Examiner withdraw these objections.

**Claim Rejections**

Claims 1, 4, and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Burnell-Jones (6,599,444) in view of Anderson et al. (6,030,673).

**Claim 1**

With respect to independent claim 1, Applicant respectfully traverses the rejection at least because no combination of Burnell-Jones and Anderson would reasonably meet all of the claim's recitations.

As an initial matter, Applicant respectfully submits that one of ordinary skill would not have been motivated to modify the lens reflector disclosed in Burnell-Jones so that the (1) hollow glass spheres form 10 to 40 % by volume of the Bulk Molding Compound (BMC) and (2) the volume ratio of the inorganic filler compound to the matrix resin is 1.0 to 2.5. That is, the mere fact that Anderson discloses a material with *similar values* does not mean that one of

ordinary skill at the time of invention would have been motivated to modify Burnell-Jones in a manner that would meet the claims.

Moreover, Applicant directs the Examiner's attention to *objective evidence* regarding the unexpected results of the invention, which are discussed at pages 11-18 of the original specification.<sup>1</sup>

The specification shows *seven* comparative examples in which the properties of the reflector are very close to, but outside of, the various claimed ranges. In each of these cases, the resulting reflector is deficient in some way.

*Hollow Glass Spheres Volume Below 10% or Above 40%*

Two of these comparative examples disclose the specific deficiencies found in the BMC when the volume of the hollow glass spheres is not between 10 to 40%. In comparative example 2, when the volume of the hollow glass spheres is just below 10% (i.e., 9.5 %), the specific gravity of the BMC is too high.<sup>2</sup> In contrast, in comparative example 3, when the volume of the hollow glass spheres is just above 40% (i.e., 40.5 %), the flexural strength and flexural modulus of the BMC are too low. Therefore, the BMC suffers from warping and has reduced rigidity and impact strength.<sup>3</sup>

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<sup>1</sup> See MPEP 716.01(a) at pg. 700-265. ("Examiners must consider comparative data in the specification which is intended to illustrate the claimed invention in reaching a conclusion regarding obviousness.") See also MPEP 2144.05.III at pg. 2100-149 regarding rebutting a case of prima facie obviousness by showing the criticality of the claimed range.

<sup>2</sup> See Specification at page 14, Table 2, and page 15, lines 19-22.

<sup>3</sup> See Specification at page 14, Table 2, and page 15, lines 23-32

*Volume Ratio of Inorganic Filler Content is 1.0 to 2.5*

Two more of the comparative examples disclose the specific deficiencies found in the BMC when the volume ratio of the inorganic filler content is not between 1.0 and 2.5. In comparative example 4, when the volume ratio of the inorganic content (e.g., resin, glass fiber, and hollow glass spheres) is just below 1.0 (i.e., 0.97), the flexural modulus of the BMC is again too low. Moreover, the BMC has poor resistance to outgassing, which reduces the transmission of emitted light.<sup>4</sup> In contrast, in comparative example 5, when the volume ratio of the inorganic content is just above 2.5 (i.e., 2.52), the BMC is brittle and, therefore, is not easily released from the mold. Moreover, the BMC has reduced impact resistance, and the specific gravity of the BMC is too high.<sup>5</sup>

Therefore, the specification provides specific *objective evidence* regarding the criticality and unexpected results of the claimed ranges. In fact, it is striking how different the *detailed* objective evidence regarding the claimed values in the specification is from the  *cursory and unsupported* statement by the Examiner that it merely would have been obvious to modify Burnell-Jones to meet these ranges in order to increase the material's strength and ability to withstand temperatures.<sup>6</sup>

In view of this objective evidence regarding the unexpected results of the invention, Applicant respectfully requests that the Examiner withdraw the rejection of independent claim 1.

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<sup>4</sup> See Specification at page 14, Table 2, and page 15, line 33-page 16, line 8.

<sup>5</sup> See Specification at page 14, Table 2, and page 16, lines 9-25.

<sup>6</sup> See Office Action at page 6, para. 9.

Claims 4 and 5

Moreover, Applicant respectfully requests that the Examiner withdraw the rejection of dependent claims 4 and 5 at least because of their dependency from claim 1.

Claims 6 and 9

Claims 6-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Serizawa et al. (6,000,816) in view of Burnell-Jones (6,599,444) and Anderson et al. (6,030,673).

Applicant respectfully requests that the Examiner withdraw the rejection of independent claims 6 and 9 at least for the reasons discussed above with respect to independent claim 1.

That is, each of claims 6 and 9 requires a reflector with a substrate in which (1) hollow glass spheres form 10 to 40 % by volume of the Bulk Molding Compound (BMC) and (2) the volume ratio of the inorganic filler compound to the matrix resin is 1.0 to 2.5. The reasons why Burnell-Jones and Anderson do not meet these limitations are discussed above with respect to independent claim 1.

Moreover, Serizawa, which was cited by the Examiner as disclosing a lamp shell, front lens, light source, etc., does not cure the deficiencies in the combination of Burnell-Jones and Anderson discussed above.

Claims 7, 8, 10, and 11

Finally, Applicant respectfully requests that the Examiner withdraw the rejection of dependent claims 7, 8, 10, and 11 at least because of their dependency from claim 6 or claim 9.

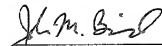
AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appl. No. 10/688,933

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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